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VEX**ations**

Server virtualization can complicate the work of storage administrators. Here's what they can do about it.

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saying enterprises aren't likel HIBBRIEF FOR BREAKING NEWS, VISIT COMPUTERWORLD.COM HIBBRIEF

Heads**Up**



Pirates Tap BI to Boost Attendance

FTER 19 CONSECUTIVE losing seasons, the Pittsburgh Pirates needed an assist to fill the nearly 40,000 seats in their home field, PNC Park

So the team turned to predictive analytics to identify customer trends that could help it retain season ticket holders and attract new ones. The tools, from SAS Institute, help predict which fans would likely renew or buy season tickets by analyzing their feelings about the team, previous purchase patterns and social media interactions, among other factors. Jim Alexander, the Pirates' senior director

of business analytics, said the goal is to give the club's sales and marketing persons information that can he used as the basis of targeted promotions and advertising

campaigns, "We interact with fans in several ways," he said, and the business intelligence tools help analyze data from multiple

The Pirates are among a growing number of organizations that are using predictive analytics to improve operational efficiencies and find new ways of

generating revenue.

Rita Sallam, a Gartner analyst, said that around 10% of enterprises are successfully using predictive analytics to drive strategic benefits. "This is an area where there will be major growth as long as we can overcome the skills gap and ease-of-use gap" that has historically stunted the adoption of

predictive-modeling tools, she said. - Jaikumar Vijayan SECURITY

Zero-Day Flaws Discovered in SCADA Systems

An Italian security researcher recently disclosed details about several zeroday vulnerabilities in supervisory control and data acquisition (SCADA) systems from several vendors. The discovery - the second such disclosure by researcher Luigi Auriemma this year - is likely to rein force concerns about weaknesses in the nation's critical infrastructure.

The most recent vulnerabilities affect SCADA products from Rockwell Automation, Corent DataHub. Measuresoft and Progea, among other vendors

Most of the vulnerabilities are remote code execution flaws that allow attackers to run code on the systems, and some of the flaws are easy to exploit. Auriemma said. At least three of the vendors have already issued fixes, and Rockwell is working on one, he said

SCADA systems are used to con trol critical equipment at power plants, manufacturing facilities, wa ter treatment plants and elsewhere. Security analysts fear that attacks against such systems could cripple critical infrastruc-

ture, including the electric grid and water supplies.

The Stuxnet worm, which exploited a weakness in a Siemens control system to disrupt operations at an tranian nuclear power plant, is often cited as an example of the kind of threat that can be unleashed upon vulnerable SCADA systems.

- IAIKUMAD VIIAYAN

WHO MAKES THE HIGHEST PERFORMANCE LOW LATENCY NEXT-GEN FIREWALL?





SONICWALL ENTERPRISE.



HEADS UP

ESTWEEN THE LINES By John Klossner



CAPEEDS

H-1B Visa Cap Must Go, Says NYC Mayor

YORK MAYOR Michael Bloom berg is calling for "eliminating the cap on H-1B visas' because restrictive U.S. visa policies - particularly limitations on employment-based green cards - are a form of 'national suicide

In a speech late last month at the U.S. Chamber of Commerce offices in Washington, Bloomberg said that "temporary visas like the H-1B program help fill critical gaps in our workforce, but the numbers are too few and the filing process too long and unpredictable."

Bloomberg has long called for eliminating the visa cap to ease access to employment-based green cards. He's also an advocate of altering visa policies to attract foreign entrepreneurs and encourage foreign students to stay in the U.S.

His latest comments come at a time when demand for H+1B visas is relatively light - as is IT hiring overall. Before the recession, all avail able sear-long visas were snapped up in a week

In his speech. Bloomberg didn't address arguments from H-1B opponents, who view the visa as a way for companies to bring in lowcost employees or displace U.S. based workers through offshore outsourcing

Instead, he said that foreign workers are critical to U.S. economic success.

Bloomberg contended that the rapid exhaustion of H-1B visavin the early 2000s caused "critical shortfalls" in the software industry and in fields like engineering, electronics, pharmaceuticals, medical research and aerospace. "[lt's] absurd to deny American companies

access to the workers they need," he said. just prior to the start of the U.S. government's 2012 fiscal year on Oct. t. U.S. Citizenship and Immeration Services had received 48,900 petitions for H-1B visas - representing about 57% of the 85,000 visas available for 2012

The downturn in demand is tied to the es onoms, said Vic Goel, an immugration attorney It shows that visa usage "does ebb and flow with the state of the economy," which helps to make the case for less restrictive policies, he arkled. Patrick Thibodeau Micro Burst

Despite global economic woes, U.S. corporate IT spending rose

according to the Bureau of Economic Analysis

OPEN SOURCE

OpenStack Eyes 'Extreme Scale' In Upgrade

QuenStack developers frave updat ad the movert's onen-source cloud software with a new scapini all intertace and a unified authentication management system.

One enail behind the worlde is to Tmake OpenStack easier to use and administer," said for athan Bryce. changing of the OverStack Project Policy Board, "And we've continued to improve for extreme scale" to enable DinariStank to an administrate "tens of thorsauds" of servers, he added, noting that hother autions out there Querali this release - intimed Brahlo - will reclude over 70 new features and enhancements, a number of which address the soal of massive scalability. A new distrib uted scheduler will deploy virtual machines anywhere in the system. sonr feature can replicate data. across different remote clusters, The image-management service novallows users to sean befor spe-

Developed by NASA for its Nebula some software rines large ideal motalfations, So fai, it has been

oboverbul machine instances.



BETWEEN THE LINES

By John Klossner



CAREERS

H-1B Visa Cap Must Go, Says NYC Mayor

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encourage foreign students to stay in the U.S. His latest comments come at a time when demand for H-1B visas is relatively light — as is IT hiring overall. Before the recession, all available year-long visas were snapped up in a week.

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OPEN SOURCE

OpenStack Eyes 'Extreme Scale' In Upgrade

OpenStack developers have updated the project's open-source cloud software with a new graphical interface and a unified authenticationmanagement system. One goad behind the update is to

*make OpenStack easier to use and administer," said Jonathan Bryce, chairman of the OpenStack Project Policy Board. "And we've continued to improve for extreme scale" to enable OpenStack to accommodate "tens of thousands" of servers, he added. noting that "other options out there aren't really considering that scale." Overall this release - named Diablo - will include over 70 new features and enhancements, a number of which address the goal of massive scalability. A new distributed scheduler will deploy virtual machines anywhere in the system, and a new multicluster container

sync feature can replicate data

across different remote clusters.

The image-management service

now allows users to search for specific virtual machine instances. Developed by NASA for its Nebula cloud project, OpenStack opensource software runs large cloud installations. So far, it has been downloaded over 50,000 times.

- JOAB JACKSON.



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NEWS ANALYSIS



Steve Jobs Remembered

Rivals and IT gurus say the Apple co-founder and former CEO 'transformed' several industries. By Gregg Keizer and Agam Shah

HE DEATH of former Apple CEO Steve Jobs last week staggered longtime technologists of all stripes, giving them pause and reminding them of their passion for an industry that started in a garage.

"The world rarely sees someone who has had the profound impact Seeve has had, the effects of which will be felt for many generations to come," said Microsoft co-founder and longtime rival Bill Gates, in a statement.

"Steve Jobs transformed four different industries: mobile place, computing, content distribution and animation," said Gartner analyst Mark Hung, "Just as we're moving into a post-PC world that needs to integrate these disparate devices and content sources into a cohesive whole, he has unfortunately left us."

Jobs, 56, had been struggling with his health for years. In 2004, he underwent treatment for a rare form of pancreatic cancer. He returned to work soon afterward, but in 2009, he underwent a liver



transplant. Early this year, he took a leave of absence to "focus on my health," as he put it, and on Aug. 24, he resigned as CEO. He will be remembered as a visionary and a maverick — a

He will be remembered as a visionary and a maverick — a sometimes cantankerous one — who pursued a doggedly independent path for Apple that could make it a frustrating place to work but that allowed it to make unique products.

In 1976, Jobs helped launch the PC business by building, with Steren Wozniak, the Apple I and co-founding Apple Compute him; said Erar Gottheil, an analyst at Technology Business Research. Nine years later, Jobs was fired by John Sculley, the executive

he recruited to succeed him as CEO. But he returned 11 years later to revive a financially strapped company.

When Jobs resigned in August, Apple was one of the most valuable

When jobs resigned in August, Apple was one of the mass variation companies in the world, with a stock market value of \$350 billion.

Shah is a reporter for the IDG News Service.

The world rarely sees someone who has had the profound impact Steve has had.

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- Everybody On $\hbar p$

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Users Hope Whitman Can Bring Stability to HP

IT execs look to new CEO Meg Whitman to sort out the muddled product strategy that Leo Apotheker set forth in August. By Patrick Thibodeau and Agam Shah

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EWLETT-PACKARO CUSTOMERS who are disconcerted by the company's recent track record of management turmoil and product strategy shifts are hoping that new CEO Meg Whitman can bring some stability to the Silicon Valley icon.

The former eBay CEO was named to succeed Leo Apotheker late last month, shortly after his ouster from the helm at HP. Apotheker was fired less than a year after he succeeded Mark Hurd, who was dismissed amid a sexual harassment probe.

Ray Lane, executive chairman of HP's board, acknowledged that directors were "embarrassed" by the way Apotheker handled announcements in August that the company might sell or spin off [Whitman] has to figure

out: Efficiesses HP calbe Hiperblee endlay out intrateg

its Personal Systems Group, planned to kill its line of WebOS smartphones and tablets, and had agreed to acquire software maker Autonomy for \$10.2 billion.

"I think the decision was poorty signaled," said Gerry McCartney, CIO at Purdue University, which uses HP servers, desktops and laptops. "When his was announced, it was unsettling. You wonder, "What's coming next?"

McCartney said he inn't rattled by management shake-ups, but noted that leaders shape a company's direction, which helps IT executives with product and vendor choices. He called out of Whitman to communicate a five-year product plans so he can stabilize Purdue's internal IT road map.

"She has to figure out in what businesses HP can be competitive and lay out a strategy," said Joe AbiDaoud, CIO at metals mining company HudBay Minerals. HP's current strategy "is somewhat in flux," he said via email.

Gary Kern, CiO of MutualBank in Muncie, Ind., said that "HP needs something to revitalize how they look at their markets, and perhaps someone from a 'new media' type company [like eBay] could help with the thinking."

Speaking to financial analysts shortly after her appointment, Whitman said, "The only thing that will rebuild the confidence in this company is delivering results, and that's what I intend to do."

results, and that's what I intend to do." For 10 years, Whitman transformed eBay from a small online auction

company to a worldwide brand. In 2008, she moved on to pursue a bigger ambition: to become governor of California. In 2010, she won the Republican nomination for governor but lost the election. Clearly, Whitman has the credentials to be a corporate leader,

but she will face close scrutiny in the months ahead as she tries to prove that she can move from running a consumer business to running an enterprise-focused IT vendor.

"Whitman brings her experience as a leader, no doubt," said N.

Whitman brings her experience as a leader, no doubt," said N.

Whitman brings he grossor of management at Boston University. "But her experience with enterprise is minimal at best." •

Shah is a reporter for the IBG New Service. Chris Kanaracus of the
IBG New Service contributed to this story.



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CenturyLink Business

Ken Murdoch

In crisis situations, this CIO helps deliver services to children. squeezing value out of every donation.

What do you do in your spare time? I try to spend as much time at home as possible. [Murdoch has been married for 29 years and has two grown children.)

Do you have any hobbles? Coaching baseball (summer semi-pro baseball at the college level) and football (at a private high school).

What's the best business book you've read? It's Your Shio: Management Techniques from the Best Damn Ship in the Navy. by Capt. D. Michael Abrashoff.

If you weren't in technology, what would you want to do for a career? This might sound kind of corny, but I'm doing it now. I'm working for good: I'm working for a cause.



N MURDOCH'S colleagues at the Save the Children Federation venture where few corporate workers go: war-torn countries, poverty-stricken regions and areas devastated by natural disasters. Yet this CIO's 30-member IT team must provide the same technologies that businesspeople in posh office buildings expect. Consider, for example, that Save the Children was one of the first nongovernmental organizations to have its networks restored and running following the catastrophic 2010 earthquake in Haiti. Murdoch's IT team made Skype operational again in less than 24 hours, allowing Save the Children of-ficials to appear on news shows to provide information and appeal for aid, while the organization's remaining IT infrastructure was up in less than 72 hours. Murdoch credits his team for such successes. Here he discusses other aspects of leading Save the Children's IT operations. Continued on page 12

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The bottom line is: How do we provide technologies better, faster and cheaper, so we can ... deliver on every dollar given to us?

> at one of our education programs, and in the classroom, you're working on daylight. There are few power sources, so there's limited computation capabilities, and that's just in the regular day-to-day and not even in the emergency response mode.

What are the challenges of moving into areas follow ing tranmatic events? What are the key technologies that you rely on? In most cases, when the immediate infrastructure is disabled, we'll rely on satellite phones and BGAN units - that's satellite communications for voice and data - and Skype to enable the nimble and immediate communications we need. If I were to compare the situation in Japan to the one in Haiti [following the earthquakes in those countries], the approach was very different in each one. With Japan being such a technology-leading country, there were better and more available technologies to set up a quick response. But in Haiti, the infrastructure was a lot less mature, and we were forced to do more with satellite phones and satellite communications.

Continued from page 10 **How does IT support** the overall mi of your organization? Our IT team is very much an integral part of the overall mission of our agency. Our main focus here is to make sure that we give our business divisions the ability to cut down the time it takes to do things, have faster responses in emergencies, and do everything we can do to support the agency's goal of creating change for

children.

Save the Children

works in areas where

won't operate. What

are the challenges you face in serving the IT

leagues in such areas?

The biggest challenge is

fugually when] we walk

into a situation where

there's very little con-

nectivity and limited

commercial power. I was in Ethiopia a year

ago visiting a school

needs of your col-

many global companies

What can IT departments at for-profit organization learn from your experiences? Having come from that sector - I spent 30 years in for-profit companies a lot of the disaster recovery and disaster-recovery planning really focuses on servers being down, systems being unavailable - and not on natural disasters. So what I think they can learn from us is [to] be prepared for a natural disaster, have that as part of your planning. And that it comes down to people who are trained and willing and able to execute the plans. A trained and committed response team is key.

Which of the past decade's technology advances have made the most difference in supporting Save the Children's work? I would have to say the Internet. The Web, social media tools and SMS text have helped us to make the most difference in supporting what our organization does. The Web has enabled us to provide and receive the communication we need with our donors and sponsors, and the use of text messaging to donate via SMS has helped extend our reach demographically.

Looking ahead, what technologies hold significant promise for your organization? I see the continued use of social networking tools - the Web, Facebook, Twitter, YouTube, Flickr and Skype. They're places where you can reach vast numbers of donors. The other things are mobile devices, cell-powered devices and the ability to take photos and upload information as quickly as possible using those devices. The bottom line is that all these technologies help us build credibility. These technologies and the ability to appeal to broader constituencies help us to be a trusted agency. It's important because it helps us with fundraising and the ability to give credible information to donors and sponsors as to where our dollars are going.

profits are often judged on the amount of each dollar that goes toward its mission versus its overhead and operations. How does that influence your decisions as CIO and the IT department's objectives and operations? The percentage of revenue and ROI calculations are different. And there's a different way of managing IT. We make every effort to establish partnerships with the vendors to put the gamechanging technologies in place and to reduce our implementation costs and provide us with reasonable and low-cost operator goals for ongoing run costs. People always forget the ongoing maintenance and run costs, the total cost of ownership behind it once it is live. We're appealing really to the technology vendors for the sense of utilizing technology for good. The bottom line is: How do we provide technok better, faster and cheaper, so we can maintain a low cost approach and deliver on every dollar given to us?

> - Interview by Computerworld contributing writer Mary K. Pratt (marykpratt@verizon.net)



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OPINION

S.J. VAUGHAN-NICHOLS

Metro on the Wrong Track For Many Windows Users

Gaudy colors. boxy designs. Where have I seen this before? Wait, I know! Windows 1.0. OU KNOW ME. I'M A LINUX GUY. Still, I think Windows has gone from being a bad joke of a desktop operating system (Windows ME) to being a reasonable choice (Windows 7). Its course hasn't been steady, though: After the still popular XP SP3, we got Vista. And now

we have Windows 8. What the heck is Steve Ballmer thinking?

Microsoft has made it clear that it considers Windows 8's Metro interface and applications to be the future. When I look at Metro, however, I see gaudy colors, boxy designs, applications that can either run as a small tile or as full screen with no way to resize or move windows. Where have I seen this before? Wait, I know! Windows 1.0.

Twenty-five years of user-interface development and this is what we get? Scary. If Metro were just a tablet interface, I might be

inclined to give it a pass - except that Android and iOS already have better, more usable interfaces. This isn't just my opinion. Look at the market: Windows Phone 7 has a Metro interface, and it has just a tiny fraction of the smartphone market. Another problem is that longtime Windows users

already know the Windows interface. They don't know Metro, which is not the Windows interface. Heck Mac OS X Lion and Mint Linux's GNOME 2.28 both look and feel more like Windows 7 than Windows 8 Metro does. Fortunately, you can use a more Windows-like interface, but Microsoft really seems to want everyone to move to Metro.

Windows developers can't love this either. They've spent years learning the likes of .Net, Windows Communication Foundation (WCF) and Windows Presentation Foundation (WPF), and now they have to learn WinRT and Jupiter/XAML. As if that isn't bad enough, their workload has just doubled, since they'll need to rewrite their apps for the more traditional Windows-style desktop.

Think you can ignore Metro? Well, if you're writing or using only business programs, it might be possible. But if you're playing in the consumer space or planning on using tablets and smartphones, you're stuck with Metro. You see, Windows 8 will run only in Metro mode on ARM processors

on which are the ones in your mobile hardware. Let's get down to brass tacks. If you produce the operating system that much of the world runs, you'd better have a darn good reason for making a major change to your main user interface. There must be something about the interface that makes

people go, "Wow." I don't see the wow. Honestly, I don't see anything in Metro that's compelling. I just see a second-rate touch interface that's going to require every Windows user to learn a totally new, and not especially useful, way to do their daily work. What's the point?

Sure, Metro gives Windows 8 one interface on all platforms, but on the desktop, it's going to be a pain for both users and developers. It seems to me that with Metro, Microsoft is beaded toward another Vista-size train wreck.

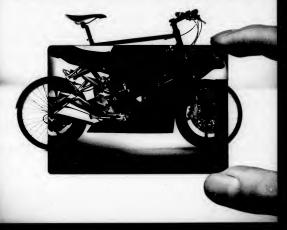
Strike that Metro is worse than that. This may be the change that breaks Microsoft's stranglehold on the desktop. I can see a lot of people switching to Macs. I can see even more people taking one look at Metro and opting to stick with XP and Windows 7 for the foreseeable future. •

ALSO IN THIS ISSUE:

m Preston Grails wonders whether Windows & has anything enterprises are looking for. Page 35

Steven J. Vaughar Nichols has been

writing about technology and the business of technology since CP/M-80 was cutting-edge and 300hos was a fast Internet connection and we liked it! He can be reached at sivn@vna1.com. The Samsung SSD 830 Series: your PC transformed.



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Storage administrators list five ways that server virtualization complicates their lives — and reveal how they handle each headache. BY STACY COLLETT

TEVEN WITHALIZA

THON offers a bot of
efficiencies, but strage
administrators say it may
open a can of worms
on the strange side.
Resulting beadaches can
include hope 10 location
has been primary and
has been primary as and
has complicated disaster and
recovery offers, among other things.

With multicore CPUs being utilized to create multiple virtual machines on servers — and since the typical large enterprise server farm is 70% to 80% virtualized — there's a lot more application I/O moving back and forth between application servers and primary storage, and between primary storage and between primary storage and between primary storage and backup storage.

vexations

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Workload density has massively increased in the data center. Now you have 30 workloads in a single rack [running virtual servers].

JEFF BOLES, SENIOR ANALYST, TANEIA GOUP

Continued from page 16

What's more, between 2000 and 2010, the number of servers worldwide multiplied by a factor of six, while the amount of storage increased by a factor of 69, thanks to server virtualization, according to researchers at IBM.

In July, Computerworld polled dozens of storage administrators to find out how server virtualization has complicated their work lives. Our findings yielded this list of five top headaches. But fear not: IT analysts and virtualization veterans offer their advice on how to deal with each challenge.

Storage Performance Slowdowns and I/O Bottlenecks

IT administrators are painfully aware that storage performance is growing at a much slower rate than computing power. So when it comes to virtualization, it's no surprise that I/O bottlenecks and slow storage performance are the No. 1 problem for one-third of the administrators who responded to the Computerworld poll.

"Virtualization lets you do a whole lot of workloads on one physical piece of hardware, but there's lots of different 10 (operations) mixed into the I/O Stream, so it makes disks work harder and caching less effective," says Jeff Boles, senior analyst at Taneja Group in Phoenix. "Virtualization lets us easily do more than our compute power is capable of."

MOW TO DEAL! The solution to the I/O bestience (depends on where the problem lies in the network or in the strongdomain. Most often, it in the storage environment, because improvements in source quotably have legged belind that of all other infrastructure. "You have a very slow, creeping, linear progression of storage capability. Reating ideals can only go to fast. Part of the problem is visibility, Administrators can't see what's aging to inside the storage environment, so they don't know how to fix its Certunately, we're getting some took that can hely you injure out that problem and address is (more easily). 'Boles says and former out that problem and address is (more easily).' Boles says and

Fiber Channel customers, for instance, might use Virtual instruments performance monitoring tool for storage area networks (SAN) to optimize performance and availability. Other storage vendors delivering visibility tools include Net-App, which recently acquired Ahorn and its predictive tool for the virtual infrastructure, and Equal Logic, which has a graphical user interface that less customers monitor storage system performance.

Boston-based ad agency Arnold Worldwide virtualized most of its servers five years ago. Chris Elam, senior systems engineer, remembers when he first started doing backups and noticed that throughput to the backups was dropping and that backup times were growing. But visibility tools on the firm! Dell Compellent SAN alerted Elam to the problem. He added more drives to increase I/O operations per second, and Compellent now streads the data among the drives.

As an extra precaution, Arnold Worldwide's IT staff set most replications to take place during off-hours, except for those involving its production file servers, which it replicates during the day because data changes constantly. That's an IO hit we are willing to take, Elam says, adding that customes service is most important. "It's one thing if backups take longer, it's another thing if user start to complian labout allow systems]."

Performance is another important consideration in the I/O equation. "It's really important that administrators start to think about the I/O density and performance they need given the amount of infrastructure they have," Boles says. "Workload density has massively increased in the data center. Now you have 30 workloads in a single rack [running virtual servers]."

I/O denity can be increased through the use of solid-state drives and similar technologies, more effective caching or autoticing, Alo, I/O will only increase as the enterprise adds more severs within a single sorage system. Scale-out technologies can help scale performance as well as capacity. "Small and mediumsize business customers can look at look from [Scale Condiging for example. The midrange customer could look at EqualLogic, and the enterprise could look at NetApp and 3Pat," Boles and

Complicating matters are workload mobility tools, such as VMware's Storage vMotion, that let users refocate virtual machine disk files between and across shared sorage locations. "Now you have to keep a backup going in relation to these virtual servers that are going to be moving around, and possiby run into other bottlevecks. That can be a serious headache," says Boles.

HOW TO DEAL: A handful of vendors are building backup and recovery tools for the virtual environment that runs within their virtual infrastructure. That way, the vendors can capture

Continued on page 22.

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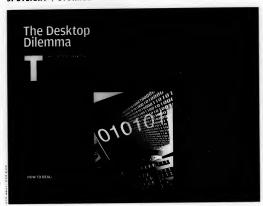
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Continued from page 20

and manage data right on top of the physical server and optimize it before it ever leaves the virtual server. Acronis, for example, recently announced a product that can

Actions, for example, recently animative a product to make the private back up virtual machines in a matter of minutes and recover the data in about the same amount of time, while keeping data organized as virtual servers more around. Many wendoes have harnessed some virtualized infrastructure capabilities, such as storage snapshot tools and replication, to make backup simpler and faster than was possible in the past.

When the Bank of Fayetteville in Arkanass first started virtualting its servers, Les Barnes, senior vice president and IT manager, trented backups the same way he would with traditional servers. He used a tage library, But after a few months, he knew there has the a better way. What's more, backups were traditionally performed overnight, but as more customers demanded 24/7 access to the online banking system, Burnes needed another solution.

He completely eliminated traditional backups and replaced them with SAN replication and SAN snapshots as a way to make multiple copies of SANs off-site.

"The beauty of using SAN replication is that it completely offloads any I/O from the server," Barnes says. "It's now SAN-cluster-to-SAN-cluster communications. It's all back-

channel stuff. There is no impact on the end user or the virtual machine. And if I have to recover, I can do it in a few minutes rather than a few hours or a couple of days."

Elam looks at Arnold Worldwide's SAN as a way to bring backups for ward. "It's almost impossible now to last write everything to tape [over the weekend]," he says, adding that the ad agency holds 60 teralytes of data on its SAN." But because we're replicating a lot of stuff offset, that kind of serves as a backup. We also bave snapshots that we keep live. We also do dedunication to oge thackups in a timely window."

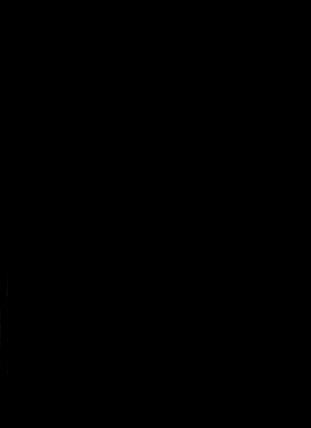
But Elam warns that those snapshots can be quite large:
"The biggest thing we didn't realize when we rolled this out
was the amount of space that snapshots or replays take up. We
didn't even think about how much it takes. You need to plan for
that in the amount of data storage you have."

Difficulty Managing Shared Storage

Some 23% of the administrators we polled reported that server virtualization creates new

headaches in managing shared storage. Enterprises typically have a lot of different workloads being stored on storage systems, and for admin-

Continued on page 24





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Continued on page 24

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SPOTLIGHT | STORAGE

Continued from page 22

Continues from page 22 strators, there aren't always clear connections among the storage volumes, the workloads that each volume supports, the demands against each volume, and who is consuming capacity.

Essentially, the virtual infrastructure has created another layer of abstraction on up of the stongs infrastructure without really freeing you from the complexity of the physical layer. Bolse captains. You you have the virtual storage layer that you've managing, made up of (Vibouret) YMFS, all the different virtual severe files and data, and you've provisioning those virtual severe files and data, and you've provisioning those virtual severe files and data, and you've provisioning those virtual severe files and data, and you for provisioning those virtual severe files of the data of the contraction of the contraction of the data of the contraction of the data of the dat

HOW TO DEAL: Consider thin provisioning, a storage virtualization capability that helps curb low storage utilization by allocating data to free space. Physical storage is allocated on demand from a shared pool, but only when needed.

By using thin provisioning along with server virtualization, users can optimize both server and storage utilization rates. Virtualization appliances and arrays from vendors such as 3Par, Compellent, DataCore Software and NetApp include thin provisioning functionality.

The Need to Adapt the Storage Infrastructure to Serve Both Physical and Virtual Environments In a finding that's similar to the backup and revery dilemma, 20% of the polled administrators said that they find it hard to adapt their storage infrastructure to handle a mis of traditional and virtual processes.

HOW TO DEAL: When jumping into virtualization solutions that will mingle with physical environments, "make sure you're doing it with the best storage vendor you can find for ease of use, simplicity and virtual infrastructure integration," Boles says.

Some of the big wendors' offerings are integrated with the virtual infrastructure, reducing the complexity of these systems 'so you don't have to do a lot crazy stuff, like disk group configuration,' he adds. "You want one-click setup of storage and Jaccess to line grain granularity provision storage so you can carve up resources, understanding who's using what, and manage it over time."

Some large scale IT departments are even making a complete switch to technologies like an NFS-NAS setup, which is ready to go into production underneath a virtual infrastructure. "You can store a whole bunch of virtual machines on one storage mount point and not have a lot of complexity around that," ays Boles. "There aren't nearly as many headaches as trying to coordinate some of those physical storage resources with a very virtual server infrastructure."

Trouble Choosing the Right Kind of Networked Storage for Virtualized Servers

Some 18% of the storage professionals surveyed said that they can't decide on the right kind of networked storage for virtualized servers.

"The right kind of networked storage makes a difference because you can scale, and get better performance and more simplicity in your processes [if you choose correctly]," Boles says. But the right solution depends largely on the organizations objectives.

At Purdue University's Krannert School of Management, for instance, the IT department's top priority wasn't 24/7 availability for its virtualized environment, but rather fast recovery time when — not #— the system went down, says IT manager [eff Ellow.

Virtualizing storage-intensive servers without big performance losses requires a level of storage performance that SANs weren't able to achieve. The obvious choice for Purdue seemed to be 10 Gigabit iSCSI, but cost was a deterrent.

Purdue ultimately went with LSI 6Gbps SAS switching technologies, which offered the benefits of a failover SAN and the performance of an end-to-end native SAS 6Gbps data path —and which the school could afford.

"Even if our SAN goes down, we have enough local storage where we could limp along in another mode. Restoring more quickly is more important than staying up," Ellow says.

HOW TO DEALS before choosing any vendor, be sure you understand the management capabilities, Barnes says. Server and storage virtualization can be simple: "You don't have to be a rocket scientist or have a degree in SAN management to take care of these things," be says.

At the end of the day, Elam says the benefits of virtual at m are worth the trouble of grappling with these five 'hall types.

"The proof far outweigh the cons just in its compine". see of use, stability, high availability, being able to replicate and do maintenance during the day, move stuff around as you need to and take hardware offline," he says "There are lost of things you don't have to come in on a weekend to do anymore." • Collett is a Computerworld contributing writer. You can contact her of strolletinghood.com.

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JEFF ELLOW, IT MANAGER, KRANNERT SCHOOL OF MANAGEMENT, PURDUE LINIVERSITY

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How do you manage a vast data store? The Library of Congress and two other big storage users share some tips. BY JOHN BRANDON

F YOU THINK the storage systems in your data center are out of control, imagine having 450 billion objects in your database or having to add 40 terabytes of data each week. The challenges of managing massive amounts of data

involve storing huge files, creating long-term archives and, of course, making the data accessible. While data management has always been a key function in IT, "the current frenzy has taken market activity to a whole new level," says Richard Winter, an analyst at WinterCorp Consulting

Services, which analyzes big data trends.

New products appear regularly from established companies and startups alike. Whether it's Hadoop, MapReduce, NoSQL or one of several dozen data warehousing appliances, file systems and new architectures, the segment is booming, Winter says. Some IT shops know all too well about the challenges inher-

ent in managing big data. At the Library of Congress, Amazon

and Mazda, the task requires innovative approaches for handling billions of objects and peta-scale storage mediur tagging data for quick retrieval and rooting out errors.

Library of Congress

The Library of Congress processes 2.5 petabytes of data each year, which amounts to around 40TB each week. And Thomas Youkel, group chief of enterprise systems engineering at the library, estimates that the data load will quadruple in the next few years, thanks to the library's dual mandates to serve up data for historians and to preserve information in all its forms.

The library stores information on 15,000 to 18,000 spinning disks attached to 600 servers in two data centers. More than on% of the data, or over aPB, is stored on a fiber-attached SAN.

and the rest is stored on network-attached storage drives. The Library of Congress has an "interesting model" in that part of the information stored is metadata - or data about the data that's stored - while the other is the actual content, says Greg Schulz, an analyst at consulting firm StoragelO. Plenty of organizations use metadata, but what makes the library unique is the sheer size of its data store and the fact that it tags absolutely everything in its collection, including vintage audio recordings, videos, photos and other media, Schulz explains.

The actual content - which is seldom accessed - is ideally kept offline and on tape, Schulz says, with perhaps a thumbnail

or low-resolution copy on disk.

Today, the library holds around 500 million objects per database, but Youkel expects that number to grow to as many as 5 billion. To prepare, Youkel's team has started rethinking the library's namespace system. "We're looking at new file systems that can handle that many objects," he says.

Gene Ruth, a storage analyst at Gartner, says that scaling up and out correctly is critical. When a data store grows beyond 10PB, the time and expense of backing up and otherwise handling that much data go quickly skyward. One approach, he says, is to have infrastructure in a primary location that handles most of the data and another facility for secondary, long-term archival storage.

Amazon.com

E-commerce giant Amazon.com is quickly becoming one of the largest holders of data in the world, with around 450 billion objects stored in its cloud for its customers' and its own storage needs. Alyssa Henry, vice president of storage services at Amazon Web Services, says that translates into about 1,500 objects for every person in the U.S. and one object for every star in the Milky Way galaxy.

Some of the objects in the database are fairly massive - up to 5TB each - and could be databases in their own right. Henry expects single-object size to get as high as 500TB by 2016. The secret to dealing with massive data, she says, is to split the objects into chunks, a process called parallelization.

In its S3 storage service, Amazon uses its own custom code to split files into 1,000MB pieces. This is a common practice, but what makes Amazon's approach unique is how the file-splitting process occurs in real time. "This always available storage architecture is a contrast with some storage systems which move data between what are known as 'archived' and 'live' states.

creating a potential delay for data retrieval," Henry explains. Another problem in handling massive data is corrupt files. Most companies don't worry about the occasional corrupt file. Yet, when dealing with almost 450 billion objects, even low failure rates become challenging to manage.

Amazon's custom software analyzes every piece of data for bad memory allocations, calculates the checksums, and analyzes how fast an error can be repaired to deliver the throughput needed for cloud storage.

Mazda Mazda Motor Corp., with 900 dealers and 800 employees in the U.S., manages around 90TB of data. Barry Blakeley, infrastructure architect at Mazda's North American operations, says business units and dealers are generating ever-increasing amounts of data analytics files, marketing materials, business intelligence databases, Microsoft SharePoint data and more. "We have virtualized everything, including storage," says Blakeley. The company uses tools from Compellent, now part of Dell, for storage virtualization and Dell PowerVault NX3100 as its SAN, along with VMware systems to host the virtual servers

The key, says Blakeley, is to migrate "stale" data quickly onto tape. He says 80% of Mazda's stored data becomes stale within months, which means the blocks of data are not accessed at all. To accommodate these usage patterns, the virtual storage is set up in a tiered structure. Fast solid-state disks connected by Fibre Channel switches make up the first tier, which handles 20% of the company's data needs. The rest of the data is archived to slower disks running at 15,000 rpm on Fibre Channel in a second tier and to 7,200-rpm disks connected by serialattached SCSI in a third tier.

Blakeley says Mazda is putting less and less data on tape about 17TB today - as it continues to virtualize storage.

Overall, the company is moving to a "business continuance model" as opposed to a pure disaster recovery model, he explains. Instead of having backup and offsite storage that would be available to retrieve and restore data in a disaster recovery scenario, "we will instead replicate both live and backed-up data to a colocation facility." In this scenario, Tier 1 applications will be brought online almost immediately in the event of a primary site failure. Other tiers will be restored from backup data that has been replicated to the colocation facility.

Adapting the Techniques

These organizations are a proving ground for handling a tremendous amount of data. StoragelO's Schulz says other companies can mimic some of their processes, including running checksums against files, monitoring disk failures by using an alert system for IT staff, incorporating metadata and using replication to make sure data is always available. However, the critical decision about massive data is to choose the technology that matches the needs of the organization, not the system that is cheapest or just happens to be popular at the moment, he says.

In the end, the biggest lesson may be that while big data por many challenges, there are also many avenues to success. • Brandon is a former IT manager at a Fortune 100 company who now writes about technology. Follow him on Twitter (@jmbrandonbb).









VOICE OF THE CUSTOMER It's time to gather **customer feedback** in one place so you can take action. **BY ELISABETH HORWITT**

BOUT 20 MONTHS AGO,
Charming Shoppes launched
a customer insights project to
"deliver actionable customer
and market research and
analysis to the business,"
says Jeffrey Liss, who headed

up the initiative. Liss is now
Continued on page 30

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Continued from page 28

senior vice president of corporate strategy at the plus-size women's clothing retailer, which includes Lane Bryant, Fashion Bug and Catherines stores.

Before that time, the company's method of collecting and disseminating customer feedback was less than organized, Liss recalls. Various departments and brand groups gathered input from customer emails and online product reviews, while store personnel received verbal comments from shoppers. Anything deemed relevant was "passed up the command chain" to top executives via email distribution lists, Liss says. As a result, "we had a lot of anecdotal information floating around," and executives had no way to distinguish important data from rumor, he says.

After a considerable amount of research and thought, Liss came up with a "voice of the customer" (VOC) strategy to collect both quantitative and qualitative input from various customer feedback channels; analyze it for sentiment, meaning and importance; and then forward relevant data to the right

people for further analysis and action.

This sort of organized approach is becoming even more critical as the company adds new feedback channels, such as an online survey tool that will ultimately deliver approximately 10,000 customer comments per week, according to Liss.

When it comes to interpreting such comments, "sentiment analysis is key," he notes. For example, "if a customer says, 'I really love going to Fashion Bug, but I don't like sorting through all of the jeans to find the ones that fit me well, you need to



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parse the statement using sentiment analysis to understand that she is a big fan of Fashion Bug, but we may have a customer service issue to address," he explains.

In December 2010, Charming Shoppes signed up for the software-as-a-service (SaaS) version of a VOC system from Reston, Va.based vendor Clarabridge. Deployment of the system, Clarabridge Enterprise, is very much in the early stages, says Liss, pointing out that "it takes time to learn how to harness the power of this tool."

While plenty of companies are launching VOC programs, most are just getting started. Last year, a survey by Temkin Group found that of 10s companies with formal VOC programs, 63% were

still "figuring out what to collect, and how," says Bruce Temkin, a managing partner at the Waban, Mass, based research firm. But a Forrester Research survey conducted late last year shows some momentum behind VOC programs. Of the 118 customer experience professionals Forrester surveyed, 52% had a VOC program in place and 29% were actively considering one. "Big companies have finally embraced the link between customer experience, loyalty and long-term financial success."

says Forrester analyst Andrew McInnes. "Investing in voice-ofthe-customer programs is the next logical step." Indeed, businesses are recognizing the value of customer input for a growing number of strategic areas, including marketing, product development and quality assurance. Moreover, VOC systems can also be used to collect comments and criticisms from industry pundits and the general public.

VOC Gets Social

Another driver for VOC programs is the social Web's growing clout as a consumer sounding board. In a first-quarter 2011 consumer survey by Temkin Group, about 20% of the respondents said that they had used Facebook to report a bad experience, while 13% said that they had used it to report a good experience. Moreover, 11% had reported a bad experience on thirdparty review sites like Yelp and TripAdvisor, and 7% had used such sites to report good experiences.

Still, many business leaders remain wary of data garnered from social media, which can be less than accurate or reliable, to say the least. Temkin Group's third-quarter 2010 survey found that only 22% of VOC programs were currently using

Continued on page 32





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BUSINESS INTELLIGENCE

Continued from page 30 social media sources, although 35% were considering doing so.

Business executives and business analysts want to ensure that the quality of the feedback data they incorporate into critical decisions is comparable to that of the internal data they've been using. And IT executives need to ensure that their staffs and systems aren't overwhelmed by a flood of irrelevant or

low-quality data. That isn't stopping some companies from incorporating valuable social media data into their VOC programs. But rather than try to "boil the ocean,"

as one analyst put it, they are limiting their range to sources that are specific to their products and customers. Charming Shoppes, for example, is looking to monitor its Lane Bryant er community site, known as Inside Curve, and its Facebook fan pages, Liss says. "Our customers tend to he vocal and active on plus-size women's blogs," he adds.

During the past few years, customer intelligence professionals, such as marketing and brand managers, have increasingly turned to social media intelligence services like Radian6, Scout Labs (now Lithium Technologies) and BuzzMetrics, which gather customer feedback from the social Web. The service widers then analyze the data for relevance and sentiment and present the resulting intelligence in prepackaged reports, charts and "social dashboards."

Such services can cast as wide or as fine a net as custome want; they also offer some degree of quality control. Dow Jones

We're introducing new products all the th so it's important to have that immediate. almost-real-time feedback.

MARYELLEN ABREU, DIRECTOR OF GLOBAL TECHNICAL SUPPORT, IROBOT

Insight, for example, "selects social media based on how influential it is. how frequently it was updated in the last 90 days, and whether it is free from spam and porn," says Martin Murtland, managing director for the service. It can also add targeted sources at a customer's request, such as Twitter feeds focused on specific subjects, he notes.

The Silos Problem

The problem is that such deployments tend to create information silos that are isolated from IT staff and systems. As a result, there's little sharing of insights among groups. VOC programs need to

integrate all of the various feedback channels into a single infrastructure, Temkin points out. And that's where IT comes in. At iRobot, for example, customer feedback used to reside in a variety of silos, including outsourced call centers and a growing number of social media sources, says Maryellen Abreu, director of global technical support at the maker of self-guided vacuum cleaners and other robotic equipment. This meant that managers had trouble using the data to make high-level decisions about subjects like changes to product designs, Abreu says "We're introducing new products all the time, so it's important

to have that immediate, almost-real-time feedback," she adds. Burlington, Mass.-based iRobot decided to use RightNow CX, a SaaS-based customer experience management system from RightNow Technologies that "gives a 360-degree view of the cus-tomer: when they called, emailed, chatted or posted on a forum, and what issues they brought up," Abreu says. It aggregates

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ber of topics analyze and number of languages supported.

The full suite, for midsize to laige companies, costs \$7,500 to \$10,000 per

Pricing starts six figures per year an depends on volume, services and support.

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Charming Shoppes' VOC team has already developed a dashboard, including a one-page document that each brand group uses in its monthly business review. This enables groups to share their insights, according Liss. "Right now it's just the highlights — major feedback that's actionable — but we'll build from there," he says. *

Horwitt, a freelance reporter and former Computerworld senior editor, is based in Waban, Mass. Contact her ot chorwitt@verizon.net.

A FRACTURED MARKET

T THIS POINT, 'no single vendor provides [the] full functionality to meet the entire social intelligence needs of the enterprise," says Forrester analyst Zach Hofer-Shall. However, many vendors have been working hard over the past year or two to

Social intelligence service providers mine the social whether customer feedback and then use sentiment analysis and natural language processing to determine its reternance and sentiment score. Major players include Radiand, NetBase, Buzzlárchic srows and of NetBase, Discourt of NetBase, Dirimon Netagon, Social Ladis (low Lithium Technologies), Cymfowy, Nill niche, WiceWindow, Medidaktier, Drower Research, Symthesis, Compression and Dow Josos Singiph.

Customer insight and action patients wendors have strong backgrounds in mining and nauly sing I gare bodies of unstructured material generated by internal channels such as customer surveys and call center notes. Major players in this field include Clararidge. Astresiny, Kara, Automorp, SSS residues and fightforw. Many of these companies have recently moved into the social media market by partnering with or acquiring social intelligence service provide est. Their suites often include social community software, as wellared than of CMB stock—switcher their work of these of a partner,

Social community platform vendors such as Lithium, live Softwer. Heligent Systems, Ricklyps and Mixinga help businesses set up online commissile where customers can druk, exchange tops and express opinions. They also provide tools for monitoring, mining and analyzing customer interchanges. Some, like Heligages and Lithium, allow businesses to set up their Facebook fan pages to that a customer who posts a question there automatically gasha scress to the social community, which of helps hat be among plant access to the social community, which of helps hat be among

Enterprise feedback management vendors like Allegiance. Mindshare, Medallia and Responselek specialize in tracking and analyzing customer feedback and behavior and the effectiveness of media campaigns and other marketing strategies.

- ELISABETH HORWITT

BUSINESS INTELLIGENCE

Continued from page 30 social media sources, although 35% were considering doing so.

Business executives and business analysts want to ensure that the quality of the feedback data they incorporate into critical decisions is comparable to that of the internal data they've been using. And IT executives need to ensure that their staffs and systems aren't overwhelmed by a flood of irrelevant or

low-quality data. That isn't stopping some companies from incorporating valuable social media data into their VOC programs. But rather than try to "boil the ocean,"

as one analyst put it, they are limiting their range to sources that are specific to their products and customers. Charming Shoppes, for example, is looking to monitor its Lane Bryant customer community site, known as Inside Curve, and its Facebook fan pages, Liss says. "Our customers tend to be vocal and active on plus-size women's blogs," he adds.

During the past few years, customer intelligence professionals, such as marketing and brand managers, have increasingly turned to social media intelligence services like Radian6, Scout Labs (now Lithium Technologies) and BuzzMetrics, which gather customer feedback from the social Web. The service providers then analyze the data for relevance and sentiment and present the resulting intelligence in prepackaged reports, charts and "social dashboards."

Such services can cast as wide or as fine a net as customers want; they also offer some degree of quality control. Dow Jones

We're introducing new products all the time. so it's important to have that immediate. almost-real-time feedback.

MARYELLEN ABREU. DIRECTOR OF GLOBAL TECHNICAL SUPPORT, IROBOT

Insight, for example, "selects social media based on how influential it is, how frequently it was updated in the last 90 days, and whether it is free from spam and porn," says Martin Murtland, managing director for the service. It can also add targeted sources a a customer's request, such as Twitter feeds focused on specific subjects, he notes.

The Silos Problem

The problem is that such deployments tend to create information silos that are isolated from IT staff and systems. As a result, there's little sharing of insights among groups. VOC programs need to

integrate all of the various feedback channels into a single infrastructure, Temkin points out. And that's where IT comes in. At iRobot, for example, customer feedback used to reside in a variety of silos, including outsourced call centers and a growing

number of social media sources, says Maryellen Abreu, director of global technical support at the maker of self-guided vacuum cleaners and other robotic equipment. This meant that managers had trouble using the data to make high-level decisions about subjects like changes to product designs, Abreu says. "We're introducing new products all the time, so it's important to have that immediate, almost-real-time feedback," she adds.

Burlington, Mass.-based iRobot decided to use RightNow CX. a SaaS-based customer experience management system from RightNow Technologies that "gives a 360-degree view of the customer: when they called, emailed, chatted or posted on a forum, and what issues they brought up," Abreu says. It aggregates

Hotel Chain Looks for 'Moments of Truth'



Price

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The robot maker now uses Right Now's Cloud Monitor, which mines customer posts for words or phrases with negative connotations, such as all-cap words and "bad language," Abreu says. It then alerts customer support personnel and, if a post starts to go viral, automatically escalates alerts to Abreu's attention.

Most companies are still figuring out the critical components of their VOC programs: what data to look for, what metrics to use and, most important, what action to take, according to Temkin. "Feedback is cheap. Actionable insights are priceless," he says.

IT and business leaders shouldn't become discouraged: Even early-stage VOC programs can get good results, according to Temkin, "Once you get into actually quantifying how customers view you, it starts changing how your people think about the business," he explains. "They start to spot customer issues and put in place processes where they can highlight and start to solve the big problems. And the big payback is customer loyalty." Liss definitely has some ideas. For example, monitoring hlogs will give his employees an early heads-up on buying trends. "If all of a sudden plus-size women are talking about how comfortable a

certain fabric is, we can study it for use in our products," he says. Charming Shoppes' VOC team has already developed a dashboard, including a one-page document that each brand group uses in its monthly business review. This enables groups to share their insights, according Liss. "Right now it's just the highlights - major feedback that's actionable - but we'll build

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T THIS POINT. "no single vendor provides libel full functionality to meet the entire social intelligence needs of the enterprise," says Forrester analyst Zach Hofer-Shall. However, many vendors have been working hard over the past year or two to

expand their platforms to cover all the VDC bases. But if you're interested in investing in a VOC system, you should do your homework. First of all, you need to know what market the vendor started out in, because that represents the company's core strength. Recently added or acquired features and functions may not be fully integrated with the vendor's earlier platforms, warns James Kobielus, an analyst at Forrester. Vendors are aggressively integrating VOC functions with business intelligence, CRM and advanced analytics tools - and when you have a laundry list of technologies, a lot of assembly is required." Kobielus says. A systems integrator could be helpful in working with such a vendor, he suggests.

Social intelligence service providers mine the social Web for customer feedback and then use sentiment analysis and natural language processing to determine its relevance and sentiment score. Major players include Radiano, NetBase, BuzzMetrics (now part of Nielsen). Crimson Hexagon, Scout Labs (now Lithium Technologies), Cymfony, NM Incite, WiseWindow, MediaMiser, Em-Power Research, Synthesia, Converseon and Dow Jones Insight.

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Enterprise feedback management vendors like Allegiance, Mindshare, Medallia and ResponseTek specialize in tracking and analyzing customer feedback and behavior and the effectiveness of media campaigns and other marketing strategies.

CHISABETH HORWITT



Getting the Most Out of SIEM

ME CIO continues to question the value of our \$250,000 investment in a security incident and event management money in the budget next year to expand SIEM deployment to other areas of the world, and he wants to know what he'll get for that money.

My usual response is that we can better detect malicious activity in the network thanks to the sophisticated correlation rules we can build. But that isn't enough for the CIO, so I've had to think outside

of the box. computerworld.com One idea came to me blogs/security during a meeting with our enterprise audit and risk director, who mentioned that one of his responsibilities is to audit the financial system. That comment led me to create a rule that keeps track of who logs in to the financial system and what logs are generated when a financial transaction, such as cutting a check or processing a payment for electronic funds transfer, is executed. The rule states that anytime a check is cut to the person who is logged in, or to any existing employee, an alert should be triggered. Another

new rule leads to alerts when certain people access the system an unusual number of times per day.

I also turned my attention to domain administrator accounts. Holders of those accounts can, for example, view our CIO's email, calendar and contact or look into anyone's file share, PC of Microsoft SharePoint document library. When I first arrived at this company, domain accounts were handed out like lollipops. For example, if you were assigned to the belo desk, won automati-

cally got one. You're a new IT manager? Here's a domain account for you. Welcome to the company! I have since put the kibosh on that

practice and have implemented requirements for domain account creation, which include my approval.

Those measures have helped to decrease domain accounts by 60%. But from time to time, accounts still get created without my approval. I therefore created a rule in our SIEM tool to capture the event ID and data generated when a domain account is created, and to trigger an alert. If I see that there's no approval, then I escalate.

My usual response is that we can better detect malicious activity in the network ... but that isn't enough for th 2 CIO.



I also saw an opportunity to use the SIEM tool in my efforts to better control resource placement in the DNZ, which refers to the part of our network that faces the Internet. As I've explained before, resources in the DNZ are in the crosshairs of hackers and other malicious types. Though I have been cracking down and rooting out resources

that unnecessarily leave us vulnerable, it

hasn't been easy to intercept every rogue

machine that's placed into one of our

many DMZs. SIEM Eves the DMZ

The fact that our CIO is highly concerned about the DMZ issue makes the use of SIEM in DMZ monitoring very attractive. So I wrote a rule to detect when a new IP address has been added to the DMZ networks by correlating data with our Nessus scans. If a resource is added without change control or architecture review, then I sexalate.

My new rules have given me a more solid answer for the next time the CIO asks me about the return on investment that we're getting from the SIEM deployment. Besides the standard response that we've prevented sensitive data from leaving the company via command-and-control back channels, I can say the prevented to unauthorized servers from being added to his DIMZs and prevented four unnecessary users from being able to read his email.

There's no data from the financial system so far, but when there is, I think the CIO will leave me alone. *
This week's journal is written by a real security manager, "mathias Thurman," whose name and employer have been disquised for obvious reasons. Centect him at mathias. humman@yabox on.



Security Manager's

Getting the Most Out of SIEM

The CIO isn't convinced about the value of investing in a security incident and event management tool.

HE CIO continues to question the value of our \$250,000 investment in a security incident and event management (SIEM) tool. I want more money in the budget next year to expand SIEM deployment to other areas of the world, and he wants to know what he'll get for that money.

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SIEM Eyes the DMZ

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PRESTON GRALLA

The Enterprise Is Unlikely to Jump on Microsoft's Metro

Enterprises are going to be hardpressed to see improvements. They might skip the upgrade entirely.

ICROSOFT RECENTLY released a Developer Preview of Windows 8, which Steven Sinofsky, president of Microsoft's Windows division, called a "bold re-imagination." For once, corporate hype is accurate; this new version of Windows is dramatically

different from Windows 7, Vista and XP. Not that different always means better. Enterprises are going to be especially hard-pressed to see improvements in Windows 8. In fact, they might skip the upgrade entirely

To understand why, let's take a brief look at the upcoming operating system. Windows 8 introduces an interface, which it calls Metro, that's completely different from anything ever seen in Windows before. (Steven J. Vaughan-Nichols has more to say about Metro on page 14.) Based on the Windows Phone 7 tiled interface. Metro is clearly designed for tablets. When you boot Windows 8, you're dropped straight into the Metro interface, which is made up of many large, brightly colored tiles. The tiles can display changing information such as stock prices or social network updates - whatever you prefer.

The tiles run full-screen, just like tablet or smart phone apps. They lack the usual Windows menus and controls and can't be resized. They're simple to use and clearly designed for consumers.

So where's the familiar Windows desktop? It's just another app. Click the Desktop tile, and you're sent into what looks very much like the familiar Windows 7 desktop, with the usual clickable icons for running apps, a taskbar with thumbnails and so on. There are some changes - the Start menu has been ditched in favor of a Start button that brings you back to the Metro interface - but in general, what you'll see there will be very familiar.

For enterprises, though, Metro is a problem. Upgrading to Windows 8 could require a significant amount of time to retrain people on how to use

their computers. It could mean a lot of reprogramming. It could put a burden on help desk personnel. In short, it could be a migration nightmare.

And to what end? Metro doesn't seem to have any clear benefits for corporations. Michael Cherry, an analyst at Directions on Microsoft, told Computerworld that Microsoft hasn't "made the case yet that enterprises will want this.

One possibility is that Microsoft will allow enterprises or hardware makers to turn off Metro, or at least relegate it to the background and have users boot directly into the old, familiar Windows desktop. But in that case, what would enterprises get out of Windows 8? In the Developer Preview, at least, there's nothing new in the desktop and thus no reason for enterprises to upgrade.

It may well be that Microsoft is purposely ignor ing enterprises with the release of Windows 8. Gartner analyst Michael Silver says that "Microsoft has implied that [Windows 8] would not drive an upgrade cycle. After all the work on Windows 7 deployment, organizations [are] looking for a little respite and [are] planning to take a break because of migration fatigue."

If that's the case, then Microsoft took this opportunity to design a consumer-centric operating system that's optimized for tablets - an area where the company needs to play catch-up - not for enterprises, where it remains strong and where migration fatigue may have set in.

So don't expect to see Windows 8 on your enterprise desktop. For a new version of Windows, you may have to wait for Windows q. .

Preston Graffa is a Computerworld.com contributing editor and the author of more than 35 books.

including How the Internet Works (Que, 2006).

Career Watch

What Does an **EBT CIO** Do?

Forester Research (Igenes that COS currently spend GS/M) of their time at "chief manatemance officers", which is, they have to devise several hors as all you manatemance officers, "that is, they have to devise several hors as all you may be a provided to the provided several that their several provided in the first interest several search (all the search even devised in deciding whether their interest interests and the search of their than their several several search and their search of their search interests and their search of their





SOURCE: FORDESTER RESEARCH, JULY 2013

Anjul Bhambhri



IBM's vice president of Big Data Products explains the role of data scientists.

What is a data aclentist? Asta scentist is someone who anables an organization this data to discover actionable treats that lead to business results. Data scientists look at what questions business people need to ask to remain competitive. They work directly with Clevel executions, advising them on how to orive maximum value from big data and integrate new information. In amay wax, a data scientist erver as a change agent in today's workforce, pushing organizational collaboration and information in integration.

What sort of background and skills are best to bring to this position? Successful data scientists can handle informa-

these postational successful orang sciencias can inauticine innovation complexity, historice both the bestimes and IT organizations, and pursue their own research. They provide the most value when they are learning what the data is telling reaster than spending time working on the functional aspects of data management. Therefore, deep involving on how to mine the data or use predictive analytics is less important than experience in applying the right ouestions with the technology tools Companies will mine out on excellent candidates if they use a nauticinous devoking from prior on more considerations. The control of the control or on the control or on the control or on the control or of the control or of

Propole interested in the role should have some background in math, modeling and analysis, with possible professional work in matchine learning, data mining or predictive analytics. Candidates should be able to work across the organization and internets various disciplines. And once in the role, the data scientist must continue professional education, pursuing things like IBMS Tire boot camps on improving data management and strategy skills.

is there much demand for this role right never A. Accopic search will find over 10.000 possings for data scientists. That's an inspressive number for a nasceref fired, Businesses are starting to understand the need for data-driven insights. I find myeal frequently explaining the position to prospective and current clients. Specifically, idexus how the role works, the appropriate academic and professions indeprended a good candidate, and how to integrate the position into your existing oversearching.

Another indicator of the demand for data scientists is the num beer of conferences focused on this role. In May 2011, the first annual bras Scientist Summit was held, and in August 2011, the Jones Stanfacial Meeting was held, with Significant attendance by practitioners and companies hoping in Ofm good candidates. Stanford University has estimated that L200 enabytes of data were created in 2010. That's a tentrol increase in five years, and it is shows that there is a real demand for the role.



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TRUE TALES OF IT LIFE AS TOLD TO SHARKY



Wasso Hargagout At?

Net admin pilot fish's company is in the middle of switching to a new phone carrier - a project that has seen one delay after another. But the new carrier is quick to respond to problems, thanks in part to a system that automatically transcribes fish's unicemails to the customer-service reo to emails. But then comes the weekend when a cracked tooth sends fish on an emergency trip to the dentist - and while he's in the chair, his phone starts to vibrate. It's half an hour before he's able

to check messages, at which point he learns that the old carrier has disconnected an office by mistake He calls the new carrier and leaves a message. When there's no response, he calls again and again for the next half-hour what's going on? "I drove back to the office and emailed the customer-service rep," fish says. "She was right on the ball and solved the problem. Why was she so slow in responding before? She was unaware of the problem because her emails were gibberish, Apparently the voicemailto-email transcription system fails to understand post-dentist English."

If You Have to Ask Who, the Bribe Didn't Work

This pilot fish is working in the small database group of a big corporation, and his boss is on vacation for two weeks - which means he can pretty much make his own rules so long as everything gets done. "An engineer

acquaintance stopped by my cube one afternoon with a simple request," says fish, "I told him truthfully that my in-basket was so full, it would take longer to get to his task than to actually do it. Then,

> nuts. I'll move your job to the top of the pile." The next morning, I found a half-dozen donuts on my desk. I didn't have to ask who they were from. The engineer

jokingly, I added, "But if you bribe me with do-

half an hour." This Time It's

It's a few years back, and most of the users at this company have thin clients. "At that time, if a user's printer ran out of paper, the thin client would freeze until paper was put in the printer," says an IT pilot fish on the scene. "One user would call me a couple times a week and tell me her computer was frozen. I would ask her if there was paper in the printer and the answer was always no. One day she called and said her printer wasn't working. Lasked about the paper and she responded. 'Yes, I checked that first," I walked down to her desk and started troubleshooting. I quickly noticed that her printer was missing its power cord. I asked what was going on, and her manager said, I got tired of her calling you about her printer not working because it was out of paper. I removed her power cord."

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Not the User

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PAUL GLEN

When Techies Speak, The Devil's in the Details

For techies. details reveal truth, but for nontechies. details cloud truth.

VERY IT PROFESSIONAL HAS BEEN HERE: A business person asks you a question, and your thorough answer just isn't good enough. You try to give more specific information in an attempt to break through the communication barrier. But the more you try, the worse things

seem to get. In the end, the business person is seething with impatience, so you start to get confused and angry.

Both parties walk away from such encounters convinced that it's hopeless to communicate with "those types" of people. They both say of the other, "They don't get it." And as a result, the business people stop asking questions, and we, the IT people, are relieved.

I'd grown so accustomed to this type of disconnect that I had come to see it as a natural part of working in organizations. But a recent interaction made me realize that it is one facet of a deep divide between business and IT, and that understanding the mot of the disconnect is crucial to resolving it.

I was talking to a smart and articulate business person. Our conversation was following the seemingly inevitable course toward disconnect until we took a step back and examined what was at the heart of our conflict. The conclusion we came to was fascinating: It wasn't the language that was dividing us; it was the fact that technical and nontechnical people have completely different perceptions of what constitutes a good answer.

The frustration that these conversations normally produce arises from our completely different understandings of what is true in the world as well as our incompatible ways of thinking about truth, identifying it, defining it and feeling it.

The business person had asked me a simple question about a project we were working on, and I had responded with an itemized list of the six key elements that related to the question. As I introduced each item, she became increasingly agitated. I had seen this reaction many times before, but it had never made any sense to me. After all, I was doing a great job of explaining things; my list was quite complete

Because, for me, a technical person, details reveal truth. Broad, sweeping statements are vague and untrustworthy, nothing more than assertions. They need to be deconstructed, clarified, qualified or proved before I believe that they embody any form of truth. Analysis is my chosen method for discovering truth. Big things are broken down into manageable components that are then examined individually. If the parts cohere, then the whole makes sense.

But for her, a nontechnical person, details cloud truth. Broad statements give her a handle on what's at stake, so she can test the truth of an idea against her internal sense of what's what. Essentially, she wants to "feel" the truth. Too many details interfere with her ability to process the explanation, thus preventing her from "getting it."

In my answer, I focused on completeness. That's my form of truth. To her, it felt like I was being evasive, and that I was overly concerned about trivial matters and unaware of what was important If I had offered a high-level answer that focused on one or two key ideas, she would have been much more receptive. She explained that she would have eventually been interested in the details, but only after she had gotten the gist.

So, think twice before you assume that a more detailed explanation is a more credible one. You might be talking to someone with a very different experience of what it means to "get it." .

Paul Glen is the CEO of Leading Gooks an education and consulting firm devoted to unlocking the value of technical people. You can contact him at info@ leadinggeeks.com.

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